

ROCKY MOUNT DISTRICT 5 FUEL MODEL G SHORT NEEDLE (HEAVY DEAD)

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FIRE DANGER POCKET CARD (STANDARD)



MEMORABLE FIRES

◆ **Lynch Road Fire:** 02/10/2008 Halifax Co.- 2000ac - ERC 32

▲ **Parktown Road Fire:** 02/19/2011 Warren Co.- 2030ac - ERC 34

Dry frontal passages were major contributors to the Lynch Road and Parktown Road Fires. Strong gusty winds of 40-50 mph along with very low RH's of 5-15% were observed on these fires. This caused rapid rates of spread, crowning and spotting.

■ **Purvis Farm and Catalytic Converter Fires:** 09/25/2010 ERC 43

Halifax Co. - 274ac and Northampton Co. - 194ac

Persistent drought conditions had the KBDI over 700. With the fuels already extremely dry, and an Adverse Wind Profile that was also present. Winds just above the surface (a "Jet Point" below 3000') were blowing at 35-45 mph. This caused the fires to tap into these winds and caused long range spotting, crowning and rapid rates of spread.

Fuel Model G Short Needle (Heavy Dead)	ENERGY RELEASE COMPONENT		
	Average Seasonal Value	Average Highest Value	Highest Value Observed
January	17	32	45
February	20	37	50
March	22	41	54
April	30	43	53
May	30	45	57
June	30	39	48
July	29	42	49
August	26	43	49
September	24	39	47
October	22	35	47
November	21	33	48
December	20	38	47

Energy Release Component (ERC)

is a number relating to the available energy released from forest fuels (BTU / ft²) at the head of a fire's flaming front. ERC is a composite of all live & dead fuel moistures. It is a very good reflection of drought conditions. It is a "build up" type index. Given a fire start in a fuel with a high ERC, fire containment can be expected to be difficult. ERC is very valuable in assessing the depth of a burn, consumption of the various fuel sizes, residual burning, and mop-up requirements.

LOCAL THRESHOLDS...WATCHOUT!

Temperature

Temperatures above **60F** are where large and multiple fires typically begin. Working on fires with temperatures above **90F** consider additional resources, more frequent breaks and the current tactics being implemented.

Relative Humidity

RH's below **30%** are where large and multiple fires increase. When RH's drop below **20%** expect extreme fire behavior that is rarely seen; spotting, crowning, and rapid rates of spread.

Winds

20' winds above **13mph** (NWS-2 min avg) or 20' winds above **10mph** (RAWS-10 min avg) and eyelevel winds above **7mph**. Wind is the most critical weather factor to stay aware of. Sudden changes in winds cause more firefighter fatalities than any other weather element.

EXTREME: >97 percentile. Only 3% of the days from 1968-2011 had an ERC above **43**.

VERY HIGH: 90-97 percentile. ERC values range from 38-43

HIGH: 70-90 percentile. ERC values range from 30-37, where large/multiple fire occurrences increase.

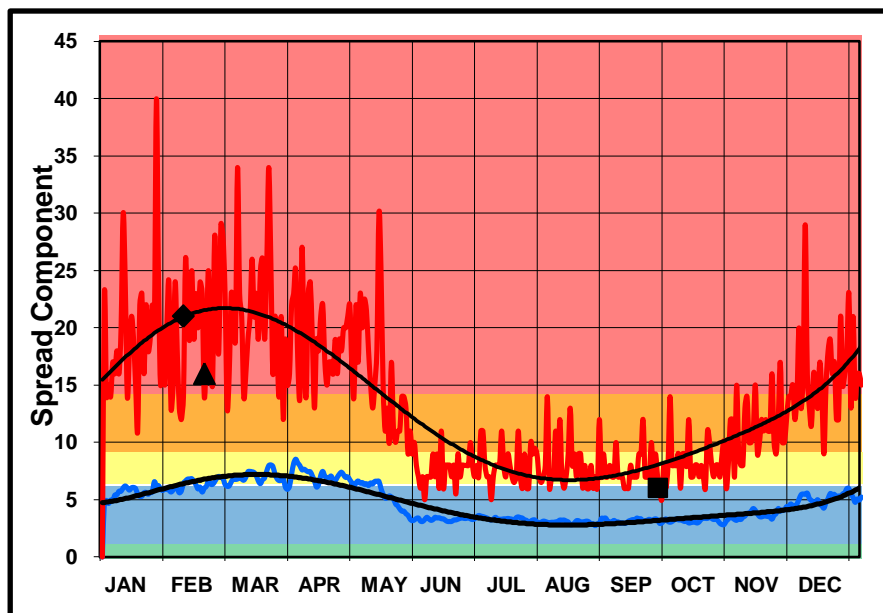
MODERATE: 10-70 percentile. ERC values range from 9-29. Most fires occur in this range.

LOW: <10 percentile. ERC values range from 0-8. Very little to no fire activity.



APRIL 1, 2011

This card is based on 42 years of data



Spread Component (SC) - the rate of spread expressed in feet per minute or chains per hour at the head of a fire. **SC** aids in assessing readiness plans, tanker use, ground tactics, and pre-positioning resources. The **SC** value usually exceeds the fire's true ROS. In Pine Plantations **SC** values exceeding **>8** are critical. At this value the fire is moving faster than initial attack of a Slip-On Unit.

Ignition Component (IC) – the probability a firebrand will cause an “actionable” fire, and requires suppression action. **IC** is more than just a probability of a fire starting. It has to have the potential to spread. **IC** can be an aid in assessing spotting potential. An **IC** value of **>35** is a critical threshold value. Values at this level are critical especially during March, April & May as firebrands initiate spot fires.

Burning Index (BI) - relates to the contribution of fire's behavior, in containing the fire. The difficulty of containment is directly proportional to the fireline intensity. **BI** is derived from the combination of the **SC** & **ERC**. **BI** can be a cross reference to fireline intensity & flame length. It assists in accessing spotting & crown fire potential as well as suppression resource needs & tactical considerations. In Pine Plantations, **BI's** of **>39**, are known to support crown fires & spotting with erratic behavior starting at **>30**. The doubling of the **BI**, 20 to 40 can increase flame length from 2 to 4 ft. yet, increases fireline intensity 5 times.

